

Today

Quiet work day. Review for Quiz #2 and/or study for another subject or quiet reading. No cell phone use during this time unless it is connected to your review or study.

Playtime starts Wednesday with cookie day and movie!

Return your textbook if you have not done that already.

Individual Quiz # 2

Tuesday, June 5

Euler's Method

Integration by parts

Separation of variables to find a particular solution to a differential equation.

Arc Length

Yellow HW answers:

1) 13 gallons

2) $y = 2e^{(\sin x)/2}$

3) $y = 2e^{(x^2-1)/x}$

4) $y = Ce^{kt} + 2$

5) $f(3.5) \approx 12.75$

6) $f(-2) \approx 3.75$

7) 10

8) $s = \int_2^5 \sqrt{\frac{x+4}{x}} dx$

$s \approx 4.46$

Turn it in when you finish.

1) $\int y dy = \int k dt$

$\frac{y^2}{2} = kt + C$

$y^2 = 2kt + C$

(0,5) $25 = 2k(0) + C$

$C = 25$

(3,7) $49 = 2k(3) + 25$

4) $\int \frac{1}{y-2} dy = \int k dt$

$\ln|y-2| = kt + C$

e^{kt+C}

$= y - 2$

$e^{kt} \cdot e^C = y - 2$

$y = Ce^{kt} + 2$

$$2) \ln y = \frac{1}{2} \sin x + C$$

$$(0, 2) \quad \ln 2 = \frac{1}{2} (0) + C$$

$$\ln y = \frac{1}{2} \sin x + \ln 2$$

$$\ln \left(\frac{y}{2} \right) = \frac{1}{2} \sin x$$

$$e^{\frac{1}{2} \sin x} = \frac{y}{2}$$

$$y = 2 e^{(\sin x)/2}$$

$$7) \quad u = \ln x \quad dv = x^{-2} dx$$

$$du = \frac{1}{x} dx \quad v = -\frac{1}{x}$$

$$10 \int \frac{\ln x}{x^2} dx = 10 \left[-\frac{\ln x}{x} + \int \frac{1}{x^2} dx \right]$$

$$10 \int_1^{\infty} \frac{\ln x}{x^2} dx = 10 \lim_{b \rightarrow \infty} \left[-\frac{\ln x}{x} - \frac{1}{x} \right]_1^b$$